

GLOSSARY

access control list (ACL) — A list associated with an object that defines the rights that groups and individuals have to the object. The ACL is used by the Security Reference Monitor to protect objects from unauthorized access.

access token — An identifier given to an object upon its creation. Based on the identity of the person who created it (or who created the object that created it), an object has certain rights, which are listed in its access token. The Security Reference Monitor compares the data in the access token with that required by the ACL to determine what kind of access the object may have to a particular object.

Active Directory — A hierarchical directory database used in Windows 2000 to store all object information, including information about users, groups, and computers.

Active Directory domain — A logical domain of Windows 2000 computers that share the same security and user information.

Active Directory-integrated zone — A zone that allows for Active Directory security to control replication of the database information.

active/active cluster — A type of cluster found in Windows 2000 Advanced Server and Windows 2000 Datacenter in which both nodes in the cluster are serving client requests all the time. If one node fails, the cluster service moves its resources to the other node and the second node manages both workloads. The two nodes do not have to be identical.

active/standby cluster — A type of cluster in which one node is serving client requests and the other is dormant, or doing work that may be discarded. When the active node fails, the cluster service moves its resources to the standby node, and the standby node drops whatever it had been doing

and takes over the active server's workload. The two nodes do not have to be physically identical.

Add/Remove Hardware Wizard — A Control Panel applet introduced in Windows 2000 that was badly missed in Windows NT. This applet allows the operating system to detect and install new hardware devices.

Address (A) resource record — An address resolution from a regular name to a TCP/IP address.

address translation — The act of converting virtual addresses to physical addresses. This conversion is necessary because the operating system deals entirely in virtual addresses, leaving physical memory addresses to hardware. The two types of addresses don't necessarily bear any relation to each other.

Advanced Configuration and Power Interface (ACPI) specification — Defines Advanced Power Management features and is an integral part of the OnNow system built into Windows 2000. For more information, see the Microsoft Web site: <http://www.microsoft.com/hwdev/onnow/>.

Advanced Options menu — An alternative boot menu (accessible by pressing F8 when the boot menu is displayed) from which you can access the various specialized start modes available for troubleshooting purposes.

Advanced Power Management (APM) — The legacy specification that implements power management in machine-specific BIOS code.

affinity — The term used when a process is set up to prefer using one processor over another.

AppleTalk Remote Access Protocol (ARAP) — A protocol that allows Apple Macintosh computers to connect to a remote access server.

Application layer — The layer of the OSI model that allows access to networking services.

application license — A license that allows you to run a particular application.

Application log — Records application events, alerts, and system messages.

application programming interface (API) — The entire set of DLLs that an environmental subsystem supports to request kernel-mode services.

application service provider (ASP) — A service running applications from a terminal server and making them available to anonymous users via the Internet for a fee.

archive attribute — A simple attribute that identifies a file as having changed since the last full backup.

archive bit — An attribute that allows the backup program to determine which files have been modified. Any file that has the archive bit set has been modified.

assigned software — Software that is installed automatically when a user reboots his or her computer. The feature is often used for software patches and service packs.

attribute — A characteristic associated with a file object (file or folder). Different file systems have different attributes.

authentication — The process that a computer undertakes to determine that you are who you say you are.

authoritative restore — A method of restoring the Active Directory information to make sure that it is the most recent copy of the information and the one that should be propagated throughout the domain.

Automatic Caching for Documents — The caching option that automatically caches only those files that are accessed by the user. This setting does not cache the entire contents of the directory, nor does it require user intervention.

Automatic Caching for Programs — The caching option that automatically copies the entire contents of the folder to the user's local cache.

background application — An application that is running but not currently receiving user input.

backup domain controller (BDC) — A Windows NT Server that maintains a read-only version of the directory database to authenticate users.

balance set manager — The part of Win2K responsible for trimming process working sets to free physical memory as well as for identifying low-priority threads that aren't receiving CPU cycles.

base priority — The priority with which a thread starts after its creation. The base priority of a thread is always equal to that of the process that created it.

basic disk — A disk that has been partitioned and formatted using Windows NT 4.0. Basic disks can support primary and extended partitions as well as logical disks.

basic storage — A hard disk designed to support primary and extended partitions and logical drives. Any operating system can recognize disks set up to use basic storage.

batch jobs — Sequences that are submitted for execution on a computer as a single task.

batch system — A runtime environment in which one program or application follows another in sequence.

bit mask — The result of an XOR function. The bit mask contains a 1 for every mismatch between numbers and a 0 for every match.

boot failures — Problems that occur between powering up a computer and the logon prompt display.

boot logging — An advanced option that boots the computer normally but lists all files loaded during the boot process, and saving the list in a file called Ntbtlog.txt. Boot logging is enabled by default when you boot to any form of Safe Mode.

boot partition — On a Windows 2000 system, the partition that contains the main operating system directory and the pagefile. The boot partition can be the same as the system partition, but most often is located elsewhere, either on the same drive or on a different physical drive.

boot sector — An area at the beginning of each partition that names the files to be loaded to run the operating system stored on that partition.

boot virus — Malicious software that targets the master boot record of a disk to make the disk unbootable. Until the advent of macro viruses, boot viruses were the most common virus type.

Boot.ini — A file that defines the host partitions and the primary executables of the operating systems present on the computer. Boot.ini also defines the default operating system that loads when the customizable boot menu display timer expires.

Bootsect.dos — On a multiboot system with another Microsoft, clone, or near-equivalent operating system such as DOS or Windows 95/98, a file that is used to establish a start-up environment more conducive to these older Microsoft operating systems.

bootstrapping — The initialization process that a computer goes through to inspect its hardware and locate the boot files for an operating system on the active partition of a hard drive.

bootstrapping files — Computer files required to initiate loading and launching an operating system. Also called boot files.

breaking the mirror set — Reverting both halves of a mirror set to independent simple volumes.

broadcast — The signal sent across the network by a resource to notify users of its availability.

bus class driver — One of the native Windows 2000 driver layers, which provides all basic driver functionality for bus devices.

bus minidriver — A small device driver that implements manufacturer-specific features not included in the bus class driver. It works in conjunction with the bus class driver.

Canonical Name — An alias that can be assigned to a TCP/IP host.

CardBus — A high-speed bus specification based on the PCMCIA technology found on laptop computers. This hardware interface supports PC Card peripheral technologies.

central processing unit (CPU) — The “brains” of the computer. The components that complete most of the calculations on a system.

certificate — A portable method of authentication that demonstrates the identity of a user or service. Certificates are files that may be imported or exported, so you can move or copy them if necessary.

certificate authority — A server entrusted with the task of creating certificates for users and services.

change journal — A list of all changes made to files in the volume. Some Windows 2000 functions, such as the remote storage service, can refer to the change journal to know when to do their jobs. The change journal is a more efficient way of looking for changes than browsing the volume looking for the desired difference.

ciphertext — Encrypted data.

Circular Logging — A process by which older log files are overwritten as the current log file fills to capacity. When this option is enabled, data recovery is greatly minimized.

client — The computer or user that requests information from a server.

client access license — A type of license that permits the holder to access a server from the network.

cluster — A logical grouping of sectors, with the number of sectors per cluster depending on the size of the partition and the file system being used. A cluster is the smallest storage unit that Windows 2000 file systems can recognize.

cluster resource — An object that can be moved between servers in a server cluster.

cluster service — A Windows 2000 service running on all nodes of a cluster, facilitating communication and failover between nodes.

clustering — A technique that involves logically combining two or more servers for redundancy.

clustering — The ability of multiple servers to function as a single, logical server. A clustering facility allows tasks and threads to be distributed among the servers in a cluster in much the same way that an operating system that supports multiple CPUs distributes threads and tasks on a single multi-processor machine.

- command language** — A collection of terms that allow a user to tell the operating system what to do.
- committed memory** — Memory allocated to a process that is backed with the necessary amount of space in the paging file. Processes must commit memory before they can store data in it.
- Computer Information File (CIF)** — A detailed collection of all information related to the hardware and software products that make up your computer (and even your entire network).
- console license** — A type of license that comes with an operating system and represents permission to install the operating system on a single machine and use it from that machine.
- context** — The information describing the operating environment for all threads in a particular process.
- context switch** — The action that takes place when a processor switches from kernel mode to user mode.
- context switching** — The act of setting aside one thread's context for that of another thread, when the second thread starts using the CPU.
- context switching** — The process of saving the state of the running task, loading the state of the pending task, and then starting execution of that pending task.
- control object** — A kernel object that controls various operating system functions, such as running the kernel process.
- control set** — A hardware-profile-specific collection of boot process parameters.
- cooperative multitasking** — A type of multitasking in which all applications in turn get some CPU time and are supposed to relinquish the processor when their time is up.
- copy backup** — A backup method that copies the data to the backup media without changing the archive bit of the files.
- copy backup** — A type of backup that works like a normal backup in that it copies all selected files to the backup media, regardless of whether the archive bit is set. A copy backup does not reset the archive bit.
- copy-on-write data sharing** — A form of shared memory protection. Copy-on-write allows multiple processes to read the same bit of data stored in physical memory. If one of the processes attempts to change the data, however, the Virtual Memory Manager copies the edited data to a new location and the process uses the copy. This approach keeps the editing process from corrupting the data that other processes are using.
- core system files** — Those files that make up the core components of an operating system. If these files become corrupted or damaged, the operating system cannot function.
- cycles** — Discrete chunks of time that the CPU can dedicate to any given application's needs.
- cyclic redundancy check (CRC)** — A mathematical recipe that generates a specific value, called a checksum, based on the contents of a data frame. The CRC is calculated before a data frame is transmitted and then is included with the frame; on receipt, the CRC is recalculated and compared with the sent value. If the two agree, the data frame is assumed to have been delivered intact; if they disagree, the data frame must be retransmitted.
- cylinder** — All of the parallel tracks on all surfaces. For example, Track 10 on all surfaces creates Cylinder 10 for the disk.
- daily backup** — A type of backup that copies only those files that have changed on the day of the backup.
- Data Link layer** — The layer of the OSI model that uses the hardware address of the system to communicate.
- data stream** — Chunks of data that may be associated with more than one file. Data streaming allows you to deal with several distinct pieces of data as one unit.
- Dcpromo.exe** — The Active Directory Installation Wizard, which is found in the windir\system32 directory. This wizard allows you to install your server as a domain controller or to remove it as one.

debugging mode — A mode that starts

Windows 2000 normally while sending debugging information through a serial cable to another computer. It is useful when you want to examine the boot process carefully.

default gateway — A device (a multihomed computer or a router) that can communicate between two different networks.

delegation of administration — A Windows 2000 feature that allows you to implement users having different permissions. For example, you can create an organizational unit and assign an administrator who will have the right to modify the objects within that organizational unit, but not in organizational units that exist above it.

deleting the mirror set — Removing the mirror set volume and thus discarding all of its data.

device class driver — A layer of built-in device support that implements basic support for a class of hardware, such as modems. A device class driver supports all generic or standard features of a particular type of peripheral, thereby easing the development burden for hardware manufacturers.

device class driver — A piece of software that supplies basic driver interfaces and functions that define broad parameters for specific types of devices.

device driver — A kernel-mode module that acts as a go-between for the I/O subsystem and the hardware abstraction layer.

device driver interfaces (DDIs) — Interfaces that define how device drivers interact with the operating system components, such as OnNow.

Device Manager — An internal Windows 2000 device management routine that handles enumeration, Plug and Play configuration, and device support.

device minidriver — A small device driver that implements manufacturer-specific features not included in the device class driver. It works in conjunction with the device class driver.

DFS link — A pointer to an additional share included in the DFS configuration.

DFS root — The local server share that acts as the starting point for users to access resources on the DFS share.

DHCP lease — An IP address, subnet mask, and optional parameters that are given to a DHCP client for a configured amount of time.

DHCP scope — A logical grouping of TCP/IP addresses that can be assigned to DHCP clients by the server.

differential backup — A backup method that backs up all data added or modified since the last full backup. This method resets the archive bit.

differential backup — A type of backup that copies to the backup media every selected file that has the archive bit set, but does not reset the archive bit.

Directory Service log — Records events related to the Directory Service.

Directory Services Restore Mode — An advanced boot option that allows you to verify that the Active Directory has been restored from backups successfully.

disk duplexing — A mirror set that incorporates two disks attached to different disk controllers, so they are not affected by controller failure.

disk duplication — A feature that allows for the duplication of system hard drives for use with third-party disk imaging software.

disk mirroring — A RAID type that combines space on two physical disks to create a mirror image; that is, when data are written to one disk, the same information is written to the other disk.

disk quotas — A feature available with Windows 2000 Server's new NTFS file system (Version 5). As an administrator, you can now assign users quotas on folders, volumes, or disks. This feature ensures that a single user does not monopolize the hard disk space that exists on your server.

disk quotas — A method of preventing users from using more than a predetermined amount of space in a volume. When a user exceeds his or her quota, he or she will be denied write access to the volume until some files have been deleted to go below the quota.

disk striping with parity — See *RAID 5 volume*.

dispatcher — A set of routines in the Win2K kernel that governs thread scheduling.

DNS Service log — Records events related to the DNS Service.

domain — A group of computers that shares a centralized security database.

domain controller — A Windows 2000 Server that authenticates users in a Windows 2000 network.

domain controller — The computer that stores the domain's security database. A domain can have more than one domain controller to ease the burden of authenticating users.

Domain Name Service (DNS) — A dynamic method for resolving TCP/IP addresses to Internet names, and vice versa.

Dr. Watson — Windows 2000's application error debugger. This diagnostic tool detects application failures and logs diagnostic details.

driver stack — The entire device driver layer in Windows 2000, including the HAL, bus class and minidrivers, and device class and minidrivers.

duplexed volume — A volume that uses two disks on two separate controllers. The data are written to both disks at the same time.

dynamic disk — A new type of disk introduced with Windows 2000. It allows for an unlimited number of volumes to be created on a single disk.

Dynamic Host Configuration Protocol (DHCP) — A protocol that allows for the automatic configuration of TCP/IP properties for clients.

dynamic link library (DLL) — A specific set of function calls that allows executable routines to be stored as files and to be loaded only when needed by a program that calls them.

dynamic routing — The process used by routers to dynamically learn about the routes that they can take to connect to remote networks.

dynamic storage — A new type of storage in Windows 2000 that designs disks to support

multidisk volumes. Volumes on dynamic disks may be added, resized, and deleted without rebooting.

Emergency Repair Disk (ERD) — A floppy disk that you can create with Windows 2000 Backup and that you can use to restore a previously saved set of configuration information (stored in %systemroot%\repair\regback). The ERD does not contain any configuration settings itself, just the files needed to restore the information saved on the hard disk.

emulation — A mechanism by which an environmental subsystem supports applications for which it doesn't have an API.

Encrypted File System (EFS) — A system for encrypting files on a Windows 2000 system to protect them from unauthorized access. Intended mainly for people with laptops and for removable storage that's vulnerable to theft.

encryption — A blanket term for any method of systematically obscuring the meaning of data by applying an encryption key to it.

End User License Agreement (EULA) — Paper or software text accompanying software that defines the conditions under which the licensee may use the software.

enumeration — The process by which Plug and Play adapters are recognized by the operating system and a device tree is built.

environmental subsystem — The part of an operating system that provides an interface to the functions that an application needs to support user requests. Win2K supports three environmental subsystems: Win32, POSIX 1.0a, and OS/2 1.0.

Event Viewer — The utility used to view the three logs automatically created by Windows 2000.

exclusive OR (XOR) arithmetic — The function that RAID 5 volumes use to calculate the parity information for their data. When calculating the XOR for two binary numbers, you compare them side by side. The result will have a 0 in every place where the numbers match and a 1 in every place where they do not.

executable image — The name of an application or a logical construct for the processes and threads that actually execute the application.

executive services — The collection of all intermediary and management components for all resources, security, and communications in the Windows 2000 environment. User-mode processes do not actually interact with executive services; rather, they interact with APIs defined for their application subsystems. The virtual machine in which the calling application runs then redirects such API calls to the kernel, where they are routed to the appropriate executive service.

extended partition — A disk partition on a basic disk that's designed to hold logical drives. Extended partitions can't hold any data on their own—they're just areas of free space in which you can create logical drives. A hard disk may hold one extended partition, but you can make as many logical drives within that partition as you like.

FAT (file allocation table) — A catalog at the beginning of a volume that notes each file and folder in the volume and lists the clusters in which each file is stored.

FAT16 — A file system first used with DOS and supported in Windows 2000 for compatibility reasons—only Windows 2000 can read NTFS volumes, so if you need to support dual-boot machines or write data to floppy disks, you need FAT. FAT16 uses a 16-bit addressing scheme for clusters and can support only fairly small volumes without wasting space from overlapped clusters, but it has little overhead.

FAT32 — A version of FAT that uses a 32-bit addressing scheme, so that it can address more clusters than FAT16.

fault tolerance — An aspect of an operating system that ensures high availability of both user and system data and of the computing resources.

fault-tolerant cluster — A cluster type in which two physically identical nodes operate in tandem, performing the same functions. If one node fails, the other takes over for it almost instantly because no resource transfer is needed.

fault-tolerant volume — Any volume designed to reduce the risk of data loss due to disk failure. Fault-tolerant volumes either keep a copy of data or maintain information from which that data may be regenerated.

File Replication Service log — Records events related to the File Replication Service.

file system — A method of logically organizing the physical disk space in a partition for use by the operating system. Different file systems catalog data differently and support different file attributes.

file system cache — A range of virtual memory addresses reserved for storing recently used data related to storage I/O.

file system driver — A device driver that translates file-oriented I/O requests for the hardware abstraction layer to pass to storage media.

filter driver — A device driver that intercepts file I/O requests and processes the request to make it intelligible to the receiving device.

First In, First Out (FIFO) — An algorithm that marks the oldest data in RAM to be sent to the paging file. The balance set manager uses this algorithm on Alpha and multiprocessor x86 computers.

foreground application — The application currently receiving user input.

forest — A collection of two or more trees with noncontiguous namespaces.

forward lookup zone — The zone in charge of Internet name to TCP/IP address resolution.

frame — The basic package of bits that represents a protocol data unit (PDU) sent from one computer to another across a network. In addition to its contents, a frame includes the sender's and receiver's network addresses as well as control information at the head and a CRC at the tail.

free space — An area of an extended partition not yet made into a logical drive.

full backup — A backup method that completely backs up the data to the backup media and resets the archive bit.

Full Zone Transfer (AXFR) — A complete transfer of all zone information from the primary site to the secondary sites.

function call — A predefined request for a kernel-mode action that the environmental subsystem can call at the request of an application.

Gateway Services for NetWare (GSNW) — A service that allows multiple Windows clients to access file and print resources on one or more Novell NetWare servers without the need to reconfigure all clients to log into the NetWare network.

Grandfather/Father/Son (GFS) — A backup scheme that uses a monthly normal backup, a weekly normal backup, and a daily incremental or differential backup to create a three-month record of server data.

group — A collection of like cluster resources that the cluster service can manage as a group.

group policies — A service that allows an administrator to control the amount of access that users have to applications and systems based on the users' permissions.

group policies — Policies that control the security settings for computers and users in the domain.

groupware — Multiuser applications that come with a group license and are used by several people simultaneously, such as e-mail servers.

handle — A connection to an object that allows one object to manipulate another.

hardware abstraction layer (HAL) — The only module of Windows 2000 that is hardware-specific. The HAL is built to match the type and state of the hardware during installation.

hardware address — See *Media Access Control (MAC) address*.

hardware device driver — A module that writes data to or retrieves data from a physical device or network, manipulating the hardware via the hardware abstraction layer.

hardware devices — Physical hardware, features, and interfaces installed in a PC.

head — The read-write mechanism in a disk. Each surface has its own head.

helper — Parts of the operating system that allow applications to communicate with hardware. Originally, these parts were lumped together in a single unit and communicated with each other in a separate area of memory, away from applications.

hidden attribute — A simple attribute that hides a file. If the hidden attribute is set, the file will not show up in a DIR listing of the folder's contents, or in Windows Explorer unless hidden files are visible.

hive — A section of the Registry that is stored in a separate file. Hives are permanent structures that are saved each time the system is shut down, and reloaded each time the system is powered up.

HKEY_CLASSES_ROOT — A Registry key that contains the value entries that control the relationships between file extensions (and therefore file format types) and applications. It also supports the data used in object linking and embedding (OLE), COM object data, and file-class association data. This key actually points to another Registry key named HKEY_LOCAL_MACHINE\Software\Classes, and it provides multiple points of access to make itself easily accessible both to the operating system itself and to applications that need access to compatibility information.

HKEY_CURRENT_CONFIG — A Registry key that contains the value entries that control the currently active hardware profile. Its contents are built each time the system is started. This key is derived from data stored in the HKEY_LOCAL_MACHINE\System\CurrentControlSet\HardwareProfiles subkey. It provides backward compatibility with Windows 95/98 applications.

HKEY_CURRENT_USER — A Registry key that contains the value entries that define the user environment for the currently logged-on user. It is built each time a user logs onto the system. The data in this key are derived from the HKEY_USERS key and the Ntuser.dat/.man file of a user's profile.

HKEY_LOCAL_MACHINE — A Registry key that contains the value entries that control the local computer, including its hardware devices, device drivers, and various operating system components. The data stored in this key are not dependent on a logged-on user or the applications or processes currently in use.

HKEY_USERS — A Registry key that contains the value entries that define the user environments for all users who have ever logged into this computer. When a new user logs into the system, a new subkey is added for that user which is either built from the default profile stored in this key or constructed from the roaming user profile associated with the domain user account.

hot fix — Similar to a service pack, except that it addresses only a single problem, or a small number of problems, and may not be fully tested.

human interface device class — One of the Windows 2000 driver classes devoted to handling input devices such as mice, keyboards, and game controllers.

idle thread — A low-priority thread that runs whenever no other threads are running on the CPU. The idle thread watches for events that will require CPU time, but doesn't actually do anything with the CPU itself.

IEEE 1394 Serial Bus (FireWire) — A high-speed serial bus that supports 63 devices per bus, allows interconnection of 1023 buses, and features automatic device recognition.

in-place upgrade — An upgrade to Windows 2000 in which all current domain configurations are maintained.

incremental backup — A type of backup that copies to the backup media every selected file that has the archive bit set and then resets the archive bit to show that the file has been backed up.

incremental backup — A type of backup that will back up all data added or modified since the last backup without resetting the archive bit.

Incremental Zone Transfer (IXFR) — A partial transfer of modified zone information between the primary and secondary sites.

index — A list of all files in a folder in an NTFS volume.

individual device driver — A device- and model-specific program that defines the exact capabilities and functions of a particular device down to the make and model level, and allows the operating system to access the device's functions.

interactive logon — The act of typing your name and password into the login screen of a Windows 2000 computer.

Internet client license (ICL) — A type of license that permits an anonymous user to log onto a terminal server via the Internet. ICLs are restricted for anonymous use; people with domain accounts can't use them.

Internet Information Services (IIS) — Microsoft's Web Services software that is included with Windows 2000 and is used to make information available on the World Wide Web.

Internet Printing Protocol (IPP) — A new protocol that allows clients to connect to a printer that is connected to a Windows 2000 network using a URL, to download and install drivers over the Internet, and to view the printer status in a Web browser, such as Internet Explorer.

Internet Protocol Security (IPSec) — A new, secure, industry standard implementation of the popular TCP/IP protocol.

Internet Services Manager (ISM) — The application used to manage and maintain IIS applications.

Internetwork Packet Exchange/Sequenced Packet Exchange (IPX/SPX) — A protocol developed by Novell for its NetWare operating system. It may be used in routed environments.

interrupt request (IRQ) — A special, high-priority communications channel through which a hardware device informs the CPU that it needs to perform some action or respond to some condition.

job — A collection of processes with certain common characteristics, such as the working set and the amount of CPU time that the threads in the process get.

Kerberos — The native Windows 2000 authentication protocol. Kerberos relies on a system of shared secrets for mutual authentication of client and server.

Kerberos security — An industry standard form of security authentication that is used by Windows 2000.

kernel mode — A processing mode that gives complete access to all writable addresses in the system process area. Kernel objects run in kernel mode. Because this mode allows access to the operating system, only code that must interact with the operating system directly runs in kernel mode.

kernel object — An object that exists only in kernel mode and with which the kernel manipulates executive-level objects such as processes and threads. Kernel objects contain no security information or other attributes, so they don't incur the same kind of policy-based overhead that executive objects do.

key — A top-level division of the Registry. The Windows 2000 Registry contains five keys. Each key can contain subkeys.

key — An algorithm used to encrypt or decrypt data. Sometimes, the same key may do both; at other times, the encryption key may be different from the decryption key.

Key Distribution Center (KDC) — A secure server in a Windows 2000 domain that's responsible for generating the cryptographic keys and tickets that are the basis of Kerberos security.

Last Known Good Configuration — The configuration settings that were in place the last time you successfully booted Windows 2000. You can choose to load these settings if you boot from the Advanced Options menu and choose Last Known Good from the menu.

Last Known Good Configuration (LKGC) — A configuration recording made by Windows 2000 of all Registry settings that exist at the time when a user successfully logs onto the computer.

launch — The process of executing an application.

Layer Two Tunneling Protocol (L2TP) — A protocol that relies on other encryption methods (such as IPSec) for communication. It creates the secure connection, but other methods of encryption must be used.

Least Recently Used (LRU) — An algorithm that marks the least recently used data in RAM to be sent to the paging file. The balance set manager uses this algorithm on single-processor x86 computers.

legacy virtualization drivers layer — A layer in the driver stack that supports legacy VxD-style device drivers.

load balancing — Distributing client requests among grouped (but not necessarily clustered) servers so that the least busy server always services the next client request.

local area network (LAN) — A group of computers that are connected to form a network within a small area, such as a floor or a building.

local print device — A printing device directly connected to the computer.

local procedure call (LPC) facility — The Win2K messaging mechanism that allows client and server processes to communicate.

Local Security Authority (LSA) — The component that checks whether a user logging on has an account on a local or a trusted domain. When you are logging onto another domain, the LSA must communicate with that domain's domain controller to see whether the domain controller has an account for you in its security database.

local user profile — A user profile stored on the local computer; the default setting for all user profiles. Local user profiles exist on a per-computer basis, so a user may have different environment settings depending on which computer he or she logs onto. Changes to the profile are saved to the local computer when the user logs off.

logical drive — A formattable division of an extended partition, created from an area of free space. An extended partition may hold as many logical drives as you like.

Mail Exchanger — A DNS record used to resolve which server in the domain takes charge of e-mail.

mandatory user profile — A roaming user profile that is not user-definable. If the user changes the environment settings, those changes are not saved at logoff. A mandatory user profile has a .man extension.

Manual Caching for Documents — The caching setting that requires users to manually transfer files to be used offline from the server to their local computer; this is the default setting for shares.

master boot record (MBR) — A file stored in the first sector of a hard disk. It contains the partition table and links to the boot sectors for all partitions.

master boot record (MBR) — The area of a hard drive that contains the data structure that initiates the boot process.

master boot record (MBR) — The section on a hard drive where the partition table and other key descriptive information are stored.

master file table (MFT) — A file in each NTFS volume that contains a 2 KB entry for each file and folder in the volume. If the file plus all attributes (including the data attribute) is smaller than 2 KB, then it may be stored in the MFT itself; otherwise, the file's entry in the MFT contains a pointer to the rest of the file's attributes that wouldn't fit.

master zone — See *standard primary zone*.

Media Access Control (MAC) address — A unique number that is assigned to each network device. It ensures that no two devices exist with the same addressing information.

metropolitan area network (MAN) — A network of computers that exist within the same metropolitan area, such as a city.

mirror set — A fault-tolerant volume that exists in two identical, linked volumes on two dynamic disks. When you write data to a mirror set, the information is written to both volumes so that if one disk fails, the data will be recoverable from the other volume.

mirror set — The name for the combined disk space that is turned into a disk mirror.

mirrored volume — A volume on a dynamic disk that uses two disks and writes the same data to both of them.

mixed mode — A mode in which Windows 2000 runs so as to maintain backward compatibility with Windows NT domains.

modular architecture — A method of programming where multiple separate components are combined into a single logical whole. Each component handles a specific task or a small set of related tasks. Windows 2000 uses such architecture in its kernel mode, particularly for the components that make up its executive services.

mounting a partition — Logically linking a volume to an empty folder on another NTFS volume. It means that you can write data to the path on one volume and have that data actually stored on the mounted volume.

MSInfo32 — A system configuration and documentation utility that reports numerous hardware and software settings. Also called the System Information tool.

multiboot system — A computer that contains two or more operating systems and allows the user to select which operating system to start during each initial system start-up cycle.

multicast scope — A scope that is used to send collaborative information to a group of computers without the need to manually configure the clients.

multimaster replication — A situation in which all domain controllers maintain a read-write copy of the database that they replicate to all other domain controllers.

multiple display support — Native support within Windows 2000 that allows definition and use of as many as nine display monitors.

multiprocessing — A system with multiple CPUs installed.

My Network Places — The starting point for accessing network resources on a Windows 2000 computer.

name resolution — The method of converting between human-readable names and computer names and addresses.

Name Server — A DNS record that defines which server in the domain acts as the name server.

native mode — The way in which Windows 2000 Systems communicate with other Windows 2000 Systems.

near-line backup — Data are migrated from the hard disk to a slower, but easily accessible media such as CD-ROMs. This backup technique allows the data to be accessible without using up disk space.

NetBIOS Enhanced User Interface (NetBEUI) — A protocol that can be used in small, nonrouted environments.

network — Two or more computers connected so that they can share information and resources.

network computers — See thin clients.

Network layer — The layer of the OSI model that addresses the messages for delivery.

network load balancing — A feature that allows you to configure your network so that some network-based servers, such as Web services, are available most of the time. These services can therefore be shared between two or more Windows 2000 Advanced Server systems and fail over between them automatically.

Network Place — A resource on the network, generally accessed through a shortcut from the My Network Places dialog box.

network redirectors and servers — File system drivers that transfer data to and from network-accessible drives.

network-interface print device — A printing device attached to a special network interface card that does not require a direct computer connection.

nodes — Individual servers in a cluster.

nonroutable protocol — A network protocol that cannot be used in a routed network environment.

normal backup — A type of backup that copies every selected file to the backup media and resets

the archive bit on the original files. This backup type is the core of a backup strategy.

NT LAN Manager (NTLM) — The default authentication protocol used in Windows NT 4.

NTBACKUP — The backup program that comes with Windows 2000. It is accessed by selecting Start, Run, and typing NTBACKUP.

Ntbootdd.sys — A file that appears on Windows 2000 and Windows NT systems with SCSI controllers that do not have an on-board BIOS translation enabled or present. It enables the drive controller system on the motherboard to control a SCSI adapter and its attached hard drives.

Ntdetect.com — A core file of Windows 2000 that inventories the computer's hardware and uses this inventory to build HKLM\Hardware. Every time you boot the machine, Ntdetect.com rechecks all hardware.

Ntdetect.com — A file that is invoked just prior to loading the Windows 2000 executable files from the boot partition. It performs a hardware inspection to create an inventory of devices and their configurations. The configuration that is detected is used to select a hardware profile, which in turn determines which device drivers are loaded.

NTFS (New Technology File System) — The native file system for Windows NT that is extended in Windows 2000. NTFS has many advanced features that make it more efficient and faster on large drives, supports volume mounting, and offers other features such as disk compression, file quotas, and a native encryption system.

Ntldr — The operating system initialization file that the computer launches upon the completion of the bootstrapping process. It is responsible for loading Windows NT or other operating systems when it appears on a multiboot system. Ntldr uses the Boot.ini file to present a boot menu, which in turn is used to select the operating system to be launched.

Ntoskrnl.exe — A file that contains the Windows 2000 kernel, which is the core of the Windows 2000 operating environment. It controls the loading of all other files involved in establishing

the computing environment. Ntoskrnl.exe resides on the boot partition in the \Winnt\System32 folder (assuming the default name for the system root is accepted during installation).

object — A component of the Active Directory, such as a user, group, computer, or application.

object attributes — Configuration variables for objects.

object classes — The definitions for new objects and for object classes within the Active Directory, which are stored within the schema.

object manager — The part of the executive that creates the objects representing executive-level structures such as processes and threads.

offline backup — A backup method in which data are copied to removable media, such as a tape.

Offline Files and Folders — The Windows 2000 feature that allows users to cache files on their local drives for access when they are not connected to the network.

offline folder — A new feature in Windows 2000 that allows you to store commonly accessed network documents on your workstation so that they are available when your system is not connected to the network. Modified files are automatically synchronized when you reconnect to the network and log on.

online — In terms of fault tolerance, when a resource provides its service on its node.

online backup — A backup technique in which a copy of the data is maintained at all times on a separate and remote system.

OnNow system — A Microsoft specification that supports hibernation, “instant-on,” and sophisticated power management features. For more information, see the Microsoft Web site:
<http://www.microsoft.com/hwdev/onnow/>.

Open Shortest Path First (OSPF) — A protocol used by routers to learn about different routes to remote networks.

Ordinary Safe Mode — An option that loads only the drivers and services required to boot the

computer and to provide a simple operating environment.

organizational unit (OU) — A way to maintain a set security model for several objects within a domain. Similar to Windows NT domains.

Organizationally Unique Identifier (OUI) — A unique number that is assigned to each network device vendor to ensure that hardware addresses do not overlap.

Osloader.exe — A file that appears only on Alpha systems. It replaces all of the various files found on Intel machines by combining their functions into a single file.

page directory — A collection of page tables for a particular process.

page fault — An event in which the Virtual Memory Manager must retrieve data from disk to put it back into RAM for a process.

page fault handler — The part of the Virtual Memory Manager that finds the data that’s been paged to disk so as to put that data back into RAM.

page table — A list of page table entries, used to map virtual addresses to storage areas in physical memory.

page table entry (PTE) — The entry on a page table that contains the mapping of physical storage to virtual memory addresses.

pagefile — Temporary storage space on a hard drive.

pages — Sections of memory used by an operating system to transfer data from the physical memory to the swap file and back. Because physical memory is much faster than hard disks, paging slows down the system considerably.

paging file — See *pagefile*.

partition — A logical division of disk space. A disk must be partitioned, and the partitions formatted, before it can be used. Disks can have a maximum of four partitions without the help of an operating system.

- partition table** — A table stored in the first sector of a hard disk, noting the location and size of every partition on the disk and indicating whether those partitions are bootable.
- PC Card** — Laptop peripheral technology based on the CardBus specification. Similar in design to PCMCIA cards but operating at a higher bus speed.
- PCI bus** — High-performance personal computer bus that allows component-to-component communication without the need for CPU intervention.
- PDC emulator** — A service that runs on a Windows 2000 system that emulates the single-master replication method used in Windows NT. This service is used until all servers have been upgraded to Windows 2000.
- per-seat license** — A type of license that permits a predefined number of computer connections to the operating system or application being licensed.
- per-session license** — A type of license that permits a predefined number of simultaneous user connections to the operating system or application being licensed.
- Physical layer** — The layer of the OSI model that defines the physical structure of the network (copper, fiber, and so on).
- physical memory** — The memory chips installed in the computer that are used for temporary storage of process data. Synonymous with random access memory (RAM).
- plaintext** — Unencrypted data.
- platter** — A magnetized metal disk within a hard disk—the actual storage medium.
- Plug and Play** — A hardware specification that allows automatic discovery and configuration of hardware devices.
- Plug and Play Manager** — The Windows 2000 component that handles operating system recognition of Plug and Play hardware.
- Point-to-Point Tunneling Protocol (PPTP)** — A protocol that is used to encrypt data between a server and a client.
- Pointer** — A DNS record that resolves a TCP/IP address to its Internet name.
- power management** — The Windows 2000 component that provides operating system power management features and controls hardware power management features.
- Power On, Self-Test (POST)** — An internal diagnostic that a computer performs during the earliest phases of the bootstrapping process.
- preemptive multitasking** — A type of multitasking in which the Virtual Memory Manager controls who has control of the CPU, rather than giving this responsibility to the applications.
- preemptive multitasking** — Type of multitasking in which the memory manager controls who has control of the CPU, rather than giving the responsibility to the applications.
- Presentation layer** — The layer of the OSI model that translates data from a format understood by the application into a generic format that can be understood by other systems.
- primary domain controller (PDC)** — The Windows NT Server that maintains the master copy of the database.
- primary partition** — A disk partition on a basic disk that's designed to hold an operating system (although it doesn't have to do so—a primary partition might hold only data). One primary partition is marked active, meaning that the computer will boot from it. A disk may hold a maximum of four primary partitions. Primary partitions may not be subdivided.
- print device** — A physical printing device.
- print driver** — A software component that is used to translate print jobs into the language used by the print device.
- print server** — A computer configured to manage the printing activities of one or more print devices.
- printer** — A software interface between the operating system and the physical printing device.
- priority interrupts** — A way for hardware devices to notify the CPU that they need its attention.
- private key** — A key devoted to decrypting data for a particular person. Private keys should be kept secure.

process — The environment defining the resources available to threads, which are the executable parts of an application. Processes define the memory available, any processor affinities, the location where the process page directory is stored in physical memory, and other information that the CPU needs to work with a thread.

processor affinity — In multiprocessor systems, a feature that may be used to tell all threads in a process that they should use one processor in preference to another, even if the preferred processor is busier than the alternative processors.

protocol — A common language that allows heterogeneous systems to communicate and share information on a network.

public key — A key devoted to encrypting data for a particular person. A public key only encrypts; it does not decrypt.

published software — Software made available to users on an as-needed basis. Users can select from the list of published software to determine whether they want to install available applications.

quantum — The number of CPU cycles that a thread gets to use when executing. During its quantum, a thread gets all of the CPU's attention.

quorum resource — A cluster resource that is used as a tiebreaker when two servers are trying to form a cluster at once. The one with control of the quorum resource controls the cluster.

quota — The amount of disk space to which a user has access on a quota-enabled volume.

RAID 5 volume — A fault-tolerant volume extending over 3–32 disks. It works like a stripe set, except that in addition to writing data in stripes across the disks in the volume, it also writes parity information for the volume. If one disk in the RAID 5 volume fails, then the data on that disk may be regenerated from the parity information on the other disks.

RAID 5 volume — An elaboration of disk striping in which parity information for the data written to the volume is also written to the volume. If one disk in a RAID 5 volume fails, the data that it

contained may be reconstructed from the parity information on the remaining disks.

read-only attribute — A simple attribute that makes it impossible to edit a file.

Recovery Console — A command-line recovery interface that you can use to repair bits and pieces of Windows 2000 without replacing all configuration settings.

redirector — An Application layer software component that captures application output and redirects it to a different location.

Redundant Array of Independent Disks

(RAID) — The technique of logically combining physical disks to make fault-tolerant disk volumes. If one disk in a RAID array fails, the other disk or disks can take over until the broken disk may be replaced.

REGEDIT — The 16-bit Registry Editor.

REGEDIT offers global searching and combines all of the keys into a single display. It can be used to perform searches, add new subkeys and value entries, alter the data in value entries, and import and export keys and subkeys.

REGEDT32 — The 32-bit Registry editor.

REGEDT32 offers control over key and value entry security but displays each root key in a separate window. It also offers a read-only mode so that you can explore without accidentally altering value entries. REGEDT32 can be used to perform searches, add new subkeys and value entries, alter the data in value entries, and import and export keys and subkeys.

REG_BINARY — A Registry value entry data type that stores data in binary format.

REG_DWORD — A Registry value entry data type that stores data in binary, hex, or decimal format.

REG_EXPAND_SZ — A Registry value entry data type that stores data in an expandable text-string format that contains a variable that is replaced by an application when it is used (for example, %Systemroot%\file.exe).

REG_MULTI_SZ — A Registry value entry data type that stores data in text-string format that contains multiple human-readable values separated by Null characters.

REG_SZ — A Registry value entry data type that stores data in text-string format.

Registry — The hierarchical database of system configuration data that is essential to the health and operation of a Windows 2000 system.

Remote Computer Management — A service, also included with Windows 2000 Professional, that adds the capability to configure the properties of any server service or application that might be installed on a remote system.

Remote Display Protocol (RDP) — The specialized protocol developed for Terminal Services that facilitates communication between the client and the server.

Remote Installation Service (RIS) — A service that allows for the remote installation of Windows 2000 Professional systems from a central networked location.

remote storage — A service that an administrator can configure to automatically migrate files that are not commonly accessed to a remote storage device, such as a tape backup system, so as to free up disk space for applications and services that require it.

removing the mirror set — Discarding one half of a mirror set's data (converting the volume to unallocated space) and reverting the other half to a simple volume.

reparse points — NTFS pointers that may be set into a file path to redirect the path from one volume to another. Reparse points make mounted volumes work.

replica — A copy of part of the directory.

reserved memory — Virtual memory addresses set aside for a particular process but not yet committed—that is, no space in the paging file has been reserved for them.

resident — Attributes that are stored in the master file table instead of being pointed to are known as

resident attributes. Some attributes are required to be resident.

resources — Name resolution information for a zone.

resources — Part of a cluster (hardware or software) that the cluster software manages. The cluster service includes DLLs that represent some common potential resources, and developers can build their own.

reverse lookup zone — A zone that maintains the pointer records and resolves IP addresses to names.

roaming user profile — A user profile stored on a network server and downloaded to whichever computer a user is currently logged into. Changes to the profile are saved to the network server when the user logs off.

root domain — The top-level domain in Active Directory (for example, microsoft.com).

root folder — The folder in the FAT that lists all folders in the volume and all files in the root directory. A root folder can contain a maximum of 512 entries.

routable protocol — A network protocol that can be used in a routed environment to communicate with remote networks.

routing — The process of transferring packets of information from one network to another network.

Routing Information Protocol for Internet Protocol (RIP for IP) — A protocol used by routers to learn about different routes to remote networks.

routing table — A list of available networks and interfaces over which a system must communicate to contact a remote system.

runtime environment — The packaging of common control elements for applications to use.

Safe Mode — A way of booting Windows 2000 with a minimal set of drivers. It displays the usual desktop (although using only the Vga.sys driver) and has no networking support.

Safe Mode (Command Prompt Only) — An option that works like Safe Mode—no networking

support, basic VGA video, no extraneous drivers—except that it uses the command prompt (Cmd.exe) for a shell instead of Explorer (Explorer.exe).

Safe Mode with Networking — An option that is just like Safe Mode, except for the addition of network support. You would use this boot option when you want a pared-down version of the operating system, but need network support to fix something.

schema — The way in which the Active Directory recognizes different objects. You can modify the schema to add information, such as a user's picture.

secret key communication — The method of authentication on which Kerberos is based, where a client and server must both know and use the same cryptographic key to protect the network.

sector — The smallest physical unit of storage on a hard disk.

security ID (SID) — The unique identifier that is determined by the security restrictions of the user group to which you belong and any settings that the administrator has applied directly to your account.

security identification (SID) number — A unique number assigned by Windows 2000 to each user account.

Security log — An Event Viewer log that records security-related events.

security principal — A Windows 2000 computer in a domain using Kerberos.

selection information file — The file in which backups are stored. This file has a .bks extension.

service — A software component that exists on servers that run in the background so as to perform normal server operations, such as file and print sharing, Web and FTP services, and DNS services.

Service Location — Allows you to configure services that are located on remote systems.

service pack — A collection of code replacements, patches, error corrections, new applications, version improvements, or service-specific configuration settings that correct, replace, or hide the

deficiencies of the original product, preceding service packs, or hot fixes.

Services for Macintosh — A service that connects Apple Macintosh systems to a Windows 2000 system and allows file and print sharing.

Session layer — The layer of the OSI model that initiates and maintains communication between different systems on the network.

simple volume — A volume on a dynamic disk that exists on a single disk. Simple volumes may be expanded on the same disk or made into spanned volumes that extend to another physical disk.

smart terminal — A computer that has only a monitor and a keyboard with a network attachment.

spanned volume — A volume that extends over two or more dynamic disks.

sparse files — Files marked with an attribute that says, "Only provide space in the paging file for the parts of this file that actually have data in them, instead of strings of 0s." The data have pointers to the places where the long strings of 0s can be, so that they can be filled in as necessary, but sparse files save room in the paging file and in memory by allocating only the storage that's actually needed.

spawn — Same as *launch*. The process of executing an application.

standard primary zone — The authority for the zone. It is in charge of all changes to the domains.

standard secondary zone — A read-only copy of the standard primary zone database. It is used for fault tolerance and load balancing.

Start of Authority (SOA) — A DNS record that defines the different timeout and TTL values for the domain.

static routing — A system in which the network administrator must manually configure all paths from one network to another.

stripe set — A volume that extends over two or more dynamic disks, but which reduces disk read and write times by writing data to all disks in stripes, instead of filling up the volume from back to front as normal volumes do.

stripe set with parity — See *RAID 5 volume*.

striped volume — Same as a stripe set, but for dynamic disks.

subkey — A sublevel division of a Registry key. A subkey can contain other subkeys and value entries.

subnet — A logical boundary on a network.

superscope — A process of combining two or more scopes to group them into a single administrative unit.

surface — The side of a disk platter. Each platter has two surfaces.

symmetric encryption — A method of data encryption that uses the same algorithm to encrypt and decrypt plaintext.

system attribute — A simple attribute that identifies a file as part of the operating system.

system buses — The Windows 2000 component that recognizes and controls system buses such as PCI, CardBus, FireWire, and USB.

System log — An Event Viewer log that records information and alerts about Windows 2000's internal processes.

system page — Chunks of memory, as viewed by a processor. The system page for an x86 machine is 4 KB in size; for an Alpha machine, it is 8 KB in size.

system partition — The partition that contains the files used to initialize the Windows 2000 loading process.

System State — An option that allows you to choose which components to back up, such as the Active Directory, the boot files, and the Registry.

System State data — Windows 2000's name for system configuration information. System state data include the Registry, the boot files, the class registration database, and, if applicable, the certificate services database, Active Directory structure, and SYSVOL.

task switching — A method of multitasking in which the user may switch between applications.

The application in the foreground gets all CPU cycles; the background applications get none.

terminal server client access license (TSCAL)

— A type of license that permits the computer to which it's assigned to run a session from a terminal server.

Terminal Services — The Windows 2000 component that provides access to the Windows 2000 console for many types of clients. Similar to terminal functions in a mainframe environment.

terminal services — A service that provides Windows 2000 Server systems with the ability to support multiple client sessions running on a single computer. This feature greatly reduces TCO by minimizing the amount of hardware and software upgrades needed for each individual client system.

thin clients — A low-cost, low-powered desktop environment with just enough CPU power and memory to handle local input and output tasks.

thread — An entity within a process for which Win2K schedules CPU time to execute a function of some kind. When a thread has finished its job, it terminates.

thread — The executable element of an application.

thread state — Any one of five states that a thread may be in, defining its readiness to use the CPU.

threading — A way for a single task to operate multiple related activities in parallel without imposing the delays associated with a typical context switch.

ticket — A data structure generated by the KDC when a client computer asks the KDC for a secret key. The server's half of the secret key is embedded in the ticket and encrypted with the key that the KDC and the server have in common.

time slicing — A fixed length of time that the system allows a single task to occupy the CPU.

Tower of Hanoi (ToH) — A backup scheme that uses five tapes in rotation to create a 32-week record of normal backups. Because this backup scheme does not include differential or incremental backups, it should not be used as the sole backup plan.

track — A concentric circle traced on the surface of a platter, used to physically divide storage space.

transaction log — A list of changes to the volume structure maintained by NTFS. When changes are complete, they're listed in the transaction log as being committed. If the disk stops working, when it restarts, NTFS rolls back the volume structure to its form at the last committed change. This technique prevents the volume structure from being corrupted by half-made changes.

transitive trust — A relationship that states that if domain A trusts domain B, and domain B trusts domain C, then domain A will automatically trust domain C.

Transmission Control Protocol/Internet

Protocol (TCP/IP) — The protocol for the Internet. It allows for the connection of large networks in different geographical locations.

Transport Driver Interface (TDI) — The specification to which all transport protocols must be written so that they can be used by higher-layer services, such as programming interfaces, file systems, and interprocess communication mechanisms.

Transport layer — The layer of the OSI model that is responsible for ensuring error-free transmission and reception of data.

tree — A collection of domains that use the same contiguous namespace.

trim — The procedure in which some of a process's working set is moved to the paging file to free room in physical memory.

trust relationship — A relationship that is set up between domains so that one domain can trust resources from another domain.

tunnel — A communication mechanism used by VPNs to establish a second, secure session between a client and remote server.

unallocated space — An area of a physical disk that has not yet been partitioned.

Universal Serial Bus (USB) — A new high-speed serial bus that supports 127 peripheral devices and automatic device configuration.

user mode — A restricted kind of access to CPU functions and virtual memory. User mode limits user applications to using per-process virtual memory addresses and a subset of CPU functions, allowing them to request kernel-mode functions but not to read or write data in system areas.

user profile — A file containing environment settings, which is loaded when a person logs onto a computer or domain. User profiles may be stored on the local computer or on a server, and may be either user-definable or locked down.

value — The actual data stored by a value entry.

value entry — A named Registry variable that stores a specific value or data string. A Registry value entry's name is typically a multiword phrase without spaces that uses title capitalization.

variable priority thread — A thread with a base priority from 1 to 15 that may have a higher priority if the dispatcher thinks it appropriate. A variable priority thread may never have a priority higher than 15.

VGA Mode — An advanced boot option that boots Windows 2000 as usual, except that it uses the generic Vga.sys instead of the video driver you have installed. It is useful for fixing problems related to bad or incompatible video drivers.

virtual directories — Folders used by the Web service to provide content to the Internet.

Virtual DOS Machine — A software environment within Windows 2000 that supports legacy DOS programs running in a protected environment space.

virtual machine — A software construct that creates a computer environment for each process, so that the process appears to be the exclusive resident of the physical machine. In Windows 2000, application subsystems construct virtual machines for processes. When a process requests access to a resource (whether memory, CPU time, keyboard input, display changes, or hard drive resources), the virtual machine relays that request to the application subsystem in which the virtual machine resides. This subsystem, in turn, passes the request to the appropriate executive service in the kernel mode.

virtual machines — A way for Windows 2000 to let non-Windows 2000 applications run on the system. It emulates the native operating system of the application.

virtual memory — A mechanism by which RAM is supplemented with disk space to make it appear that the computer has more memory installed than it really does.

virtual memory — A method of using both hard disk space and physical RAM to make it appear as though a computer has as much as 4 GB of RAM.

virtual multitasking — A way of making a computer appear as if it is executing more than one thing at a time.

virtual private network (VPN) — A secure connection between a client and a private network over the Internet.

virtual server — The name by which the nodes in a cluster are collectively known. Clients connect to the virtual server, not to the individual nodes within the server.

volume — Another name for a partition—a logical division of physical disk space. Most often, volumes refer to areas on dynamic disks, whereas partitions refer to the division of basic disks.

VxD driver — The legacy device driver model, still supported under Windows 2000, that requires much more development effort than corresponding WDM drivers.

wide area network (WAN) — A group of computers that are networked over great distances, such as between cities.

Win32 Driver Model (WDM) — The new Windows driver model that allows simplified device

driver development such that one driver can be used on both Windows 2000 and Windows 98 systems.

Windows clustering — A feature that allows for the implementation of Windows 2000 clusters. A cluster can automatically detect if an application, service, or server fails and then migrate the failed component to another system in the cluster. It is designed for mission-critical applications and servers.

Windows Internet Name Service (WINS) — A service that resolves NetBIOS names (or computer names) to TCP/IP addresses.

Windows NT domain — A logical collection of Windows NT computers that share the same user database and security models.

WINS — A DNS record that defines the TCP/IP address of one or more WINS servers on the network.

working set — Data that the thread in a process is currently using and that is stored in RAM.

working set — The data that the threads in a process have stored in physical memory. The working set may grow or shrink depending on how much physical memory is available, but the process may not use any data that is not in its working set.

zone — A logical group of addresses.

zone database file — A simple text file in a standard zone that is used by DNS to resolve TCP/IP names and addresses.

zone transfer — The process of transferring information between standard primary and standard secondary servers.